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## ABSTRACT

A floor cleaning robot comprises a housing, wheels, and a motor driving the wheels to move the robot across a floor, a control module disposed within the housing and directing movement of the robot across the floor, a sensor for detecting and communicating obstacle information to the control module so that the control module can cause the robot to react to the obstacle, a removable bin disposed at least partially within the housing and receiving particulates, a first rotating member directing particulates toward the bin, and a second rotating member cooperating with the first rotating member to direct particulates toward the bin. The removable bin receives particulates directed thereto by the first and second rotating members and the particulates pass from the first rotating member to the removable bin without passing through a filter.

**20 Claims, 13 Drawing Sheets**

(58) **Field of Classification Search**  
USPC . 15/319, 339, 52.1, 340.1, 356, 360; 700/245  
See application file for complete search history.

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